VANNATTA
"Communications Receivers
And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/023,999
Confirm. No. 1592
Examiner M. Milord
Art Unit 2682

Allowability of Claims Over Whikchart, Khayrallah & Tuutjarvi

Rejection Summary

Claims 10, 11, 14-16, 19, 20 and 24 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Patent No. 6,178,314 (Whikchart) in view of U.S. Patent No. 6,047,171 (Khayrallah) and U.S. Patent No. 5,809,399 (Tuutjarvi). Official Action, 15 December 2004, para. 2.

Allowability of Claim 10

Regarding Claim 10, contrary to the Examiner's assertion, Whikchart, Khayrallah and Tuutjarvi fail to disclose or suggest a

> ... method in direct conversion and intermediate frequency RF receivers, comprising:
> determining power for a desired signal;
> determining power for signal distortion products;
> filtering the signal distortion products with a filter;
> dynamically adjusting a bandwidth of rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart does not disclose determining power for signal distortion products. At col. 2: 12-33, Whikchart discusses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients in the presence of interference. Whikchart also fails to disclose filtering signal distortion products. At col. 3: 8-41, Whikchart discusses reducing adjacent channel interference by narrowing the passband of

2

VANNATTA
"Communications Receivers
And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/033959
Confirm. No. 1892
Examiner M. Milord
Art Unit 2682

a filter. Adjacent channel interference is not the same as signal distortion products. At col. 4: 5-38, Whikchart discusses a comparator circuit for determining the presence of adjacent channel interference and the required bandwidth of the filter. At col. 4: 50- col. 5: 60, Whikchart discusses alternative circuits for determining filter coefficients and for determining the presence of adjacent channel interference.

The Examiner's reliance on Khayrallah and Tuutjarvi for teaching adjusting a filter bandwidth as a function of the power of a desired signal and signal distortion products is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and adjacent signal strengths. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah discusses adjacent channel interference, which is not the same as signal distortion products. Tuutjarvi discusses measuring RSSI in adjacent channels in a receiver (by tuning to the adjacent channels) and changing the frequency response of a filter in the receiver tuned to a receive channel based on the measurements of adjacent channels. Contrary to the Examiner's implication, there is no discussion in Khayrallah and Tuutjarvi of controlling a filter based on signal distortion products. Claim 10 is thus patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Allowability of Claim 11

Regarding Claim 11, Whikchart, Khayrallah and Tuutjarvi fail to disclose or suggest in combination with the limitations of Claim 10,

... dynamically adjusting the bandwidth of rejection by selecting a bandwidth of rejection value from a look-up table for a

3

VANNATTA
"Communications Receivers
And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/023,5??
Confirm. No. 13??
Examiner M. Mi???
Art Unit 26?2

particular power for both the desired signal and the signal distortion products.

Whikchart, Khayrallah and Tuutjarvi adjust the filter based on adjacent channel interference, not "signal distortion products". Claim 11 is thus further patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Allowability of Claim 14

Regarding Claim 14, Whikchart, Khayrallah and Tuutjarvi fail to disclose or suggest in combination with the limitations of Claim 10,

... the signal distortion products include narrowband intermodulation distortion products, determining power for the signal distortion products by determining power for the narrowband intermodulation distortion products.

Whikchart, Khayrallah and Tuutjarvi are concerned with filtering adjacent channel interference, not filtering "narrowband intermodulation distortion products". Claim 14 is thus further patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Allowability of Claim 15

Regarding Claim 15, Whikchart, Khayrallah and Tuutjarvi fail to disclose or suggest in combination with the limitations of Claim 10,

4

... dynamically adjusting rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart, Khayrallah and Tuutjarvi all adjust a filter based on adjacent channel interference, not "signal distortion products". Claim 15 is thus further patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Allowability of Claim 16

Regarding Claim 16, contrary to the Examiner's assertion, Whikchart, Khayrallah and Tuutjarvi fail to disclose or suggest a

... method in direct conversion and intermediate frequency RF receivers, comprising:
determining power for signal distortion products;
determining power for a desired signal;
filtering the signal distortion products with a filter;
dynamically adjusting a rejection of the filter as a function of the power for both the desired signal and the signal distortion products.

Whikchart does not disclose determining power for signal distortion products. At col. 2: 12-33, Whikchart discusses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients in the presence of interference. Whikchart also fails to disclose filtering signal distortion products. At col. 3: 8-41, Whikchart discusses reducing adjacent channel interference by narrowing the passband of a filter. Adjacent channel interference is not the same as signal distortion products. At col. 4: 5-38, Whikchart discusses a comparator circuit for

5

VANNATTA
"Communications Receivers
And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/033,999
Confirm. No. 1592
Examiner M. Milord
Art Unit 2652

determining the presence of adjacent channel interference and the required bandwidth of the filter. At col. 4: 50- col. 5: 60, Whikchart discusses alternative circuits for determining filter coefficients and for determining the presence of adjacent channel interference.

The Examiner's reliance on Khayrallah and Tuutjarvi for teaching dynamically adjusting a rejection of the filter as a function of the power for both the desired signal and the signal distortion products is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and adjacent signal strength. At col. 4: 14-67 and col. 5, line 6- col. 6, line 43, Khayrallah discusses adjacent channel interference, which is not the same as signal distortion products. Tuutjarvi discusses measuring RSSI in adjacent channels in a receiver (by tuning to the adjacent channels) and changing the frequency response of a filter in the receiver tuned to a receive channel based on the measurements of adjacent channels. Contrary to the Examiner's implication, there is no discussion in Khayrallah and Tuutjarvi of controlling a filter rejection based on signal distortion products. Claim 16 is thus patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Allowability of Claim 19

Regarding Claim 19, contrary to the Examiner's assertion, Whikchart and Khayrallah fail to disclose or suggest in combination with Claim 15,

> ... the signal distortion products include narrowband
> intermodulation distortion products, determining power for the

6

VANNATTA
"Communications Receivers
And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/08 },96
Confirm. No. 152
Examiner M. Mlori
Art Unit 2652

signal distortion products by determining power for the narrowband intermodulation distortion products.

Whikchart, Khayrallah and Tuutjarvi are concerned with filtering adjacent channel interference, not filtering "narrowband intermodulation distortion products". Claim 15 is thus further patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Allowability of Claim 20

Regarding Claim 20, contrary to the Examiner's assertion, Whikchart, Khayrallah and Tuutjarvi fail to disclose or suggest a

> ... method in radio communications devices having a receiver receiving a wideband signal in the presence of narrowband blockers, comprising:
> determining power for narrowband intermodulation distortion products;
> determining power for a desired signal;
> filtering the desired signal and distortion products;
> dynamically adjusting at least one of a bandwidth of rejection and rejection of the filter as a function of the power for both the desired signal and the narrowband intermodulation distortion products.

Whikchart does not disclose determining power for narrowband intermodulation distortion products. At col. 2: 12-33, Whikchart discusses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients in the presence of interference. Whikchart also fails to disclose filtering distortion products. At col. 3: 8-41, Whikchart discusses reducing adjacent channel interference by narrowing the

7

VANNATTA
"Communications Receivers
And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/033???
Confirm. No. 1???
Examiner M. Mil???
Art Unit 2632

passband of a filter. Adjacent channel interference is not the same as signal distortion products. At col. 4: 5-38, Whikchart discusses a comparator circuit for determining the presence of adjacent channel interference and the required bandwidth of the filter. At col. 4: 50- col. 5: 60, Whikchart discusses alternative circuits for determining the required filter coefficients for the narrow or wideband filter and for determining the presence of adjacent channel interference.

The Examiner's reliance on Khayrallah and Tuutjarvi for teaching dynamically adjusting a filter as a function of the power for both the desired signal and the narrowband intermodulation distortion products is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and adjacent signal strength. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah discusses adjacent channel interference, which is not the same as signal distortion products. Tuutjarvi discusses measuring RSSI in adjacent channels in a receiver (by tuning to the adjacent channels) and changing the frequency response of a filter in the receiver tuned to a receive channel based on the measurements of adjacent channels. Contrary to the Examiner's implication, there is no discussion in Khayrallah and Tuutjarvi of dynamically adjusting a filter as a function of the power for both the desired signal and the narrowband intermodulation distortion products. Claim 20 is thus patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Allowability of Claim 24

8

VANNATTA
"Communications Receivers
And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/C39,999
Confirm. No. 1892
Examiner M. Mlord
Art Unit 2682

Regarding Claim 24, contrary to the Examiner's assertion, Whikchart, Khayrallah and Tuutjarvi fail to disclose or suggest a

> ... method an RF receiver, comprising:
> determining power for a signal distortion product;
> determining power for a desired signal;
> filtering the signal distortion product and the desired signal with a filter;
> dynamically adjusting a filter rejection property as a function of the power for both the desired signal and the signal distortion products.

Whikchart does not disclose determining power for signal distortion products. At col. 2: 12-33, Whikchart discusses reducing adjacent channel interference by narrowing the passband of a bandwidth filter by switching filter coefficients in the presence of interference. Whikchart also fails to disclose filtering signal distortion products. At col. 3: 8-41, Whikchart discusses reducing adjacent channel interference by narrowing the passband of a filter. Filtering adjacent channel interference is not the same as filtering signal distortion products. At col. 4: 5-38, Whikchart discusses a comparator circuit for determining the presence of adjacent channel interference and the required bandwidth of the filter. At col. 4: 50- col. 5: 60, Whikchart discusses alternative circuits for determining the required filter coefficients for the narrow or wideband filter and for determining the presence of adjacent channel interference.

The Examiner's reliance on Khayrallah and Tuutjarvi for teaching a filter rejection property as a function of the power for both the desired signal and the signal distortion products is also misplaced. At col. 2: 1-10 and col. 4: 14-67, Khayrallah discloses filter selection based on a ratio of desired and

9

VANNATTA
"Communications Receivers
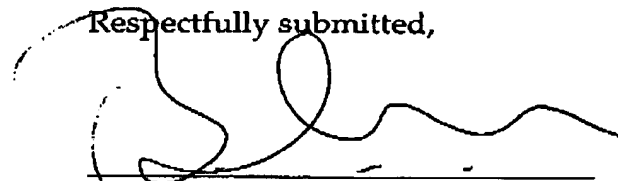And Methods Therefor"
Atty. Docket No. CS99004RL

Appl. No. 10/033850
Confirm. No. 1592
Examiner M. Milord
Art Unit 2682

adjacent signal strength. At col. 4: 14-67 and col. 5, line 6-col. 6, line 43, Khayrallah discusses adjacent channel interference, which is not the same as signal distortion products. Tuutjarvi discusses measuring RSSI in adjacent channels in a receiver (by tuning to the adjacent channels) and changing the frequency response of a filter in the receiver tuned to a receive channel based on the measurements of adjacent channels. Contrary to the Examiner's implication, there is no discussion in Khayrallah and Tuutjarvi of dynamically adjusting a filter property based on signal distortion products. Claim 24 is thus patentably distinguished over Whikchart, Khayrallah and Tuutjarvi.

Prayer For Relief

In view of any amendments and the discussion above, the Claims of the present application are in condition for allowance. Kindly withdraw any rejections and objections and allow this application to issue as a United States Patent without further delay.

Respectfully submitted,

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10